Journal of Surgical Oncology 1999;70:172–176

# Basal Cell Carcinoma of the Vulva

BENJAMIN PIURA, MD, FRCOG,[1]* ALEX RABINOVICH, MD,[1] AND RAM DGANI, MD[2]
[1]Unit of Gynecologic Oncology, Department of Obstetrics and Gynecology, Soroka Medical Center and Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel
[2]Department of Obstetrics and Gynecology, Kaplan Hospital, Rehovot, Israel

**Background and Objectives:** Vulvar basal cell carcinoma (BCC) accounts for 7% of all vulvar cancers at two hospitals in the south of Israel. The purpose of this study was to investigate the clinical findings, treatment and outcome of patients with vulvar BCC treated at these institutions.
**Methods:** Data from the files of eight patients with vulvar BCC who were managed at two regional hospitals in the south of Israel (Soroka Medical Center, Beer-Sheva and Kaplan Hospital, Rehovot) between January 1961 and December 1997 were evaluated.
**Results:** Mean age at diagnosis was 70.5 years. A history of other primary cancers was encountered in two patients. Prevailing presenting symptoms were vulvar lump, ulcer, itching, and bleeding. The tumor was most often located on the labium major and its mean size was 2.25 cm. Six patients had wide local excision, one had excisional biopsy, and one had hemivulvectomy. Two patients developed local recurrence and were treated by wide local reexcision and hemivulvectomy, respectively. At follow-up, no patient developed regional and/or distant metastases, or died of BCC.
**Conclusions:** Vulvar BCC is characterized by an indolent behavior with a very low propensity for metastatic spread. The treatment of choice is wide local excision. Because of a substantial risk of local recurrence and high frequency of other primary cancers, close long-term follow-up is essential. *J. Surg. Oncol. 1999;70:172–176.* 

KEY WORDS: vulvar lesion; patient delay; excisional biopsy; wide local excision; tumor-free margins; local recurrence

## INTRODUCTION

Although basal cell carcinoma (BCC) is the most common malignancy of the skin, accounting for approximately 65% of all cutaneous cancers, BCC of the vulva is a rare entity—representing only 2 to 3% of all vulvar carcinomas [1–13]. Temesvary [14] was the first to report a case of vulvar BCC in 1926, and it has been estimated that since then 200–250 cases of vulvar BCC have been listed in the literature [6,10,12,13]. Clinically, vulvar BCC is an indolent, locally invasive lesion which hardly ever metastasizes [1,2,10,13]. As with cutaneous BCCs in general, the vast majority of patients with vulvar BCC are cured by wide local excision including a generous amount of underlying subcutaneous tissue, although the local recurrence rate is as high as 20% in some series [1,12]. The etiology of vulvar BCC is unknown. Syphilis, chronic irritation, chronic infection, trauma, arsenicals, and prior radiotherapy have been implicated as possible precipitating factors in the development of vulvar BCC; but there seems to be no recognizable association at present [6,11,13]. In contradistinction to vulvar squamous cell carcinoma, leukoplakia is not a predisposing condition [11,12].

Because of the relative infrequency of vulvar BCC, very few individuals or even referral centers can collect a large series of this tumor. This study presents the con-

*Correspondence to: Prof. Benjamin Piura, MD, FRCOG, Head of Gynecologic Oncology Unit, Department of Obstetrics and Gynecology, Soroka Medical Center and Faculty of Health Sciences, Ben-Gurion University of the Negev, P.O. Box 151, Beer-Sheva 84101, Israel. E-mail: piura@bgumail.bgu.ac.il
Accepted 10 December 1998

joined experience of two regional hospitals in the south of Israel (Soroka Medical Center, Beer-Sheva and Kaplan Hospital, Rehovot) and includes eight patients with vulvar BCC who were managed over a 37-year period. During this period, in these hospitals, 114 vulvar malignancies were diagnosed; thus, eight vulvar BCCs accounted for 7% of all vulvar malignancies.

## MATERIAL AND METHODS

The clinical and pathological records of eight patients with vulvar BCC who were managed at the Soroka Medical Center, Beer-Sheva, and at the Kaplan Hospital, Rehovot, Israel between January 1961 and December 1997 were reviewed. The pathologic diagnosis of vulvar BCC was based on accepted histologic criteria for BCC [15–18]. Initial surgical therapy usually consisted of wide local excision, including a generous amount of underlying subcutaneous tissue. Since initial surgical therapy did not include groin lymph node dissection, the patients were staged according to the old (clinical) FIGO staging system for vulvar carcinoma, with the exception that perineal involvement per se, as in the revised FIGO staging system, did not allocate a higher stage than I or II [19]. Recurrent disease was documented in patients in whom the margins of the primary surgical specimen were tumor-free and who were free of disease after initial surgery and then developed evidence of recurrent tumor.

The following data were retrieved from the files of the patients: ethnic origin, age at initial diagnosis, menstrual history, parity, family status, past medical history, associated diseases, presenting symptoms, time interval from the beginning of symptoms until seeking medical attention, tumor size, tumor location, treatment modality, and results of follow-up.

## RESULTS

All eight patients were Jewish. Six were of European-American origin (Ashkenazi) and two were of Asian-African origin (Sephardic). The mean age at the time of diagnosis was 70.5 years (range, 58–81 years). All patients were postmenopausal. Age at the menarche was recorded in six patients and ranged from 11 to 15 years (mean, 12.8 years). Age at the menopause was recorded in seven patients and ranged from 44 to 52 years (mean, 49.8 years). Two patients were nulliparous and six had at least one child. The mean parity of the parous patients was 3.0 (range, 1 to 7 children). Five patients were married at the time of diagnosis, two were single, and one was a widow. Past medical history of the patients revealed that two patients had another primary cancer occurring 29 and 10 years, respectively, prior to vulvar BCC: the first patient had breast cancer which had successfully been treated by mastectomy and radiotherapy to the chest, and the second patient had endometrial adenocarcinoma which had successfully been treated by total abdominal hysterectomy and bilateral salpingo-oophorectomy followed by pelvic radiotherapy. One patient had cholecystectomy, one patient had appendectomy, one patient had vaginal hysterectomy for uterine prolapse, and one patient had an eye operation for cataract. Two patients had hypertension (blood pressure > 140/90), two had diabetes mellitus, one had bronchial asthma, one had rheumatic heart disease, and one had cardiomyopathy. No patient had previously used arsenic agents or had a history of syphilis. No patient had received estrogen replacement therapy.

**TABLE I. Presenting Symptoms of Vulvar Basal Cell Carcinoma (n = 8)**

| Symptom[a] | No. of patients |
|---|---|
| Bleeding | 5 |
| Lump | 4 |
| Ulcer | 4 |
| Pruritus | 3 |
| Pain | 1 |

[a]Some patients presented with a combination of symptoms.

The presenting symptoms are detailed in Table I. The most prevailing presenting symptoms were bleeding, vulvar lump, ulcer, and itching. The time interval from the beginning of symptoms until seeking medical attention ranged from 1 month to 12 years (mean, 31.8 months).

Clinical details of all eight patients are presented in Table II. All patients had a solitary lesion on their vulva ranging from 1 to 5 cm in greatest dimension (mean, 2.25 cm). In six patients, the tumor was classified as FIGO Stage I (tumor size no more than 2 cm), and in two patients the tumor was classified as FIGO Stage II (tumor size more than 2 cm). The tumor was located on the right labium major in five patients, left labium major in two patients, and right labium minor in one patient. No patient had clinically suspicious groin nodes when first seen. In all patients, biopsy of the vulvar lesion established the diagnosis of pure BCC.

Six patients had wide local excision as their primary treatment, one patient had excisional biopsy alone, and one patient was treated with simple hemivulvectomy. Histopathologic examination of the surgical specimens confirmed the diagnosis of pure BCC. In all patients, the surgical margins were free of tumor. No patient had groin lymph node dissection. No patient received radiotherapy and/or chemotherapy.

Two patients developed a recurrence: (1) A 62-year-old Sephardic woman presented with BCC measuring 2 cm on the left labium major. She had wide local excision with tumor-free surgical margins and was free of disease for the next 65 months. Then she developed a recurrence on the left labium major. This was treated by wide local reexcision with tumor-free surgical margins. To date, 80 months after initial diagnosis of vulvar BCC, and 15 months after excision of recurrent disease, the patient is

**TABLE II. Details of Patients With Vulvar Basal Cell Carcinoma (n = 8)***

| Patient age (years) | Tumor size (cm) | Tumor site | Primary treatment | Recurrence/ time to recurrence (months) | Treatment of recurrence | Follow-up (months)/ outcome |
|---|---|---|---|---|---|---|
| 60 | 2 | RLMaj | WLE | No | — | 3/NED |
| 58 | 5 | RLMaj | WLE | No | — | 236/DID |
| 62 | 2 | LLMaj | WLE | Yes/65 | Re-WLE | 80/NED |
| 72 | 1 | RLMaj | Biopsy | Yes/16 | SHV | 159/NED |
| 78 | 1 | RLMaj | WLE | No | — | 87/DID |
| 81 | 2 | RLMaj | WLE | No | — | 51/NED |
| 72 | 3 | RLMin | SHV | No | — | 132/NED |
| 81 | 2 | LLMaj | WLE | No | — | 9/NED |

*RLMaj, right labium major; LLMaj, left labium major; RLMin, right labium minor; WLE, wide local excision; Re-WLE, repeat wide local excision; SHV, simple hemivulvectomy; NED, alive with no evidence of disease; DID, died of intercurrent disease.

alive with no evidence of disease. (2) A 72-year-old Ashkenazi woman with a past history of breast cancer, osteoporosis, hypertension, and glaucoma presented with BCC measuring 1 cm on the right labium major. She had excisional biopsy with tumor-free margins, but after 6 months, presented with a recurrence on the site of the primary lesion. She had a repeat excisional biopsy with tumor-free margins, but after 10 months presented again with a recurrence on the site of the primary lesion. This was treated by right simple hemivulvectomy with tumor-free surgical margins. To date, 159 months after initial diagnosis and 143 months after hemivulvectomy, the patient is alive with no evidence of disease.

Follow-up ranged from 3 to 236 months, with five of the eight patients followed for at least 5 years. No patients were lost to follow-up; six were alive free of disease and two had died of intercurrent disease.

## DISCUSSION

The presently reported eight vulvar BCCs accounted for 7% of all vulvar cancers seen during the study period. This incidence is higher than the expected 2–3% reported in most previous studies [1,3–6,8–10,12,13]. Nevertheless, some studies have shown that the relative frequency ranges from 0.8 to 14.7% [2,7,11].

Although Arab-Bedouins make up nearly 20% of the population in the south of Israel, not even a single case of vulvar BCC was encountered among Arab-Bedouin women during the entire 37 years of the study period. This is in accord with other studies that demonstrated a very low incidence rate of vulvar malignancies in strict Muslim women, whose pubes are shaved and whose vaginal toilet is extremely scrupulous [20]. Although Jews of Asian-African origin (Sephardic) make up about 60% of the Jewish population in the south of Israel, we have noticed more Jewish women of European-American origin (Ashkenazi) (6/8) than those of Asian-African origin (Sephardic) (2/8) affected by vulvar BCC. Studies from the USA have shown that vulvar BCC is more prevalent in Caucasian women than in Black women [2,4,10,11].

Vulvar BCC shares many clinical features with vulvar squamous cell carcinoma [4,7,10]: (1) mean age at diagnosis is approximately 70 years; (2) there is a predilection for Caucasians; (3) prevailing presenting symptoms are lump, ulcer, itching, and bleeding; (4) very often, there is a delay in diagnosis; (5) most tumors are located on the labia majora.

Biopsy of the vulvar lesion is mandatory in establishing the correct diagnosis. Careful histologic evaluation of the biopsy material is necessary to rule out a malignant squamous component [10,11]. In this series, however, histopathologic examination of the biopsy and surgical specimens demonstrated that all tumors were pure forms of BCC without keratinization or squamous cell component. Vulvar BCCs containing squamous element within the neoplastic growth (basosquamous carcinoma) exhibit a more aggressive behavior with propensity of the malignant squamous component to metastasize [10,11]. In contradistinction to squamous cell carcinoma and basosquamous carcinoma of the vulva, pure forms of BCC of the vulva hardly ever metastasize. Until to date, only eight cases of vulvar BCC metastatic to the groin lymph nodes have been reported in the literature [1,3,5,9,10,13,21,22]. Of these eight cases, only three cases are well documented [3,10,21]. However, the proportion of vulvar BCCs that metastasize cannot actually be determined because inguinal lymph nodes are not usually sampled [7]. Nevertheless, although BCCs very rarely metastasize, they are known for their ability to invade and recur locally [5]. In this study, one-quarter of the patients with vulvar BCC developed local recurrence. This observation corroborates previous studies that demonstrated that local recurrence of vulvar BCC ranges from 10 to 21.5% [10,12]. Treatment of local recurrence consists of wide local reexcision, including a generous

amount of lateral margins and underlying subcutaneous tissue [6].

Like others [2,4,6,7,12,13], we have observed that the age range of patients with vulvar BCC extended from the sixth to the ninth decade of life. The mean age of the patients in this study (70.5 years) agrees with previous studies that demonstrated that the mean age of patients with vulvar BCC ranged from 65 to 76 years [1,2,7,10,13]. Menstrual histories (menarche and menopause) of patients with vulvar BCC do not seem to be different from menstrual histories of women in the local general population. There does not appear to be an association between sexuality or parity and vulvar BCC. The finding in this series that two (25%) of the eight patients had a history of other primary cancers is in accord with previous studies that demonstrated that up to 20% of patients with vulvar BCC have a history of other primary cancers [10]. We found that one-quarter of the patients with vulvar BCC were hypertensive and/or diabetic. However, high blood pressure and abnormal carbohydrate intolerance are prevalent in the elderly population and do not appear be significant risk factors of vulvar BCC by themselves. Two patients in this study had prior radiotherapy. However, we can only speculate that in the woman who had pelvic radiotherapy, the ionizing radiation had in some way affected the vulvar area.

Most distressing are the data concerning patient delay in seeking medical help [6,7,8,13]. This attitude of the patients is, most probably, due to false modesty and fear. In this series, the mean duration of patient delay was 2.6 years, but there were patients who had sought medical assistance more than 5 years after the beginning of symptoms. It has been a universal experience that patients with vulvar cancer tend to be very slow to seek medical assistance. Occasionally, delay may be caused by the patient's family doctor who fails to diagnose the disease because of failure to examine the patient, and sometimes even surgeons on referral may miss the diagnosis because of failure to perform a biopsy.

In this series, the tumor size ranged from 1 to 5 cm (mean, 2.25 cm), and most tumors (87.5%) were located on the labia majora. These findings corroborate previous studies that demonstrated that the tumor size ranged between 0.2 and 10 cm, and most BCCs occurred on the labia majora and less commonly on the labia minora, urethral meatus, prepuce, and clitoris [2,4,6,7,10,12,13].

Since vulvar BCC is uncommon and consequently very few individuals or even referral centers can build up an adequate experience of handling this disease, its optimal management has not yet been established and requires further evaluation [7]. Management of vulvar BCCs has traditionally followed that of cutaneous BCC with primary surgery comprised of wide local excision including a generous amount of lateral margins and underlying subcutaneous tissue [6–11,13]. For a multifocal lesion, complete vulvectomy might be considered [10]. In cases of large and deeply invasive BCC of the vulva, extensive wide local excision with groin lymphadenectomy should be considered [1,9,10]. If a malignant squamous component is present, a radical vulvectomy with bilateral groin lymphadenectomy should be performed [10]. Moreover, since vulvar BCCs have a tendency to recur locally if inadequately excised, the use of adjuvant radiotherapy in such cases has been an attractive concept—but the validity of adjuvant radiotherapy in vulvar BCC has remained uncertain and has yet to be demonstrated [1,7,10,11]. There is little information available on the use of chemotherapy in the treatment of primary or metastatic BCC [10].

## CONCLUSIONS

Vulvar BCC is a rare disease, accounting for 7% of all vulvar cancers at two hospitals in the south of Israel. It usually affects elderly women and is most often located on the labium major. The prevailing presenting symptoms are bleeding, vulvar lump, ulcer, and itching. Vulvar BCC is more prevalent among Ashkenazi Jewish women as compared to Sephardic Jewish women, and has not been encountered among Arab-Bedouin women in this hospital population. A history of other primary cancers is obtained in 25% of the patients. Clinically, vulvar BCC behaves in an indolent fashion and hardly ever metastasizes, but the local recurrence rate may be as high as 25%. The treatment of choice is wide local excision including a generous amount of lateral margins and underlying subcutaneous tissue. The overall prognosis is excellent; no patient in this study died due to recurrence or progression of BCC. Because of a substantial risk of local recurrence and high frequency of other primary cancers, close long-term follow-up is essential.

## REFERENCES

1. Perrone T, Twiggs LB, Adcock LL, Dehner L: Vulvar basal cell carcinoma: An infrequently metastasizing neoplasm. Int J Gynecol Pathol 1987;6:152–165.
2. Simonsen E, Johnsson J-E, Trope C, Alm P: Basal cell carcinoma of the vulva. Acta Obstet Gynecol Scand 1985;64:231–234.
3. Sworn MJ, Hammond GT, Buchanan R: Metastatic basal cell carcinoma of the vulva. Case report. Br J Obstet Gynaecol 1979; 86:332–334.
4. Goldberg DJ: Multiple basal cell carcinoma of the vulva. J Dermatol Surg Oncol 1984;10:615–617.
5. Gleeson NC, Ruffolo EH, Hoffman MS, Cavanagh D: Basal cell carcinoma of the vulva with groin node metastasis. Gynecol Oncol 1994;53:366–368.
6. Copas PR, Spann CO, Majmudar B, Horowitz IR: Basal cell carcinoma of the vulva. A report of four cases. J Reprod Med 1996; 41:283–286.
7. Feakins RM, Lowe DG: Basal cell carcinoma of the vulva. A clinicopathologic study of 45 cases. Int J Gynecol Pathol 1997; 16:319–324.
8. Collins PS, Farber GA, Herge AM: Basal cell carcinoma of the vulva. J Dermatol Surg Oncol 1981;7:711–714.
9. Winkelmann SE, Llorens AS: Metastatic basal cell carcinoma of the vulva. Case report. Gynecol Oncol 1990;38:138–140.

10. Hoffman MS, Roberts WS, Ruffolo EH: Basal cell carcinoma of the vulva with inguinal lymph node metastasis. Gynecol Oncol 1988;29:113–119.
11. Zerner J, Fenn MA: Basal cell carcinoma of the vulva. Int J Gynecol Obstet 1979;17:203–205.
12. Stillar M, Klein W, Dorman R, Albom M: Bilateral vulvar basal cell carcinomata. J Am Acad Dermatol 1993;28:836–838.
13. Benedet JL, Miller DM, Ehlen TG, Bertrand MA: Basal cell carcinoma of the vulva: Clinical features and treatment results in 28 patients. Obstet Gynecol 1997;90:765–768.
14. Temesvary N: Uber ein multiples Krompechersches Karzinom der Vulva mit ausgedehnter Elephentiasis. Zentralbl Gynakol 1926; 50:1575–1582.
15. Ferenczy A: Pathology of malignant tumors of vulva and vagina. In Coppleson M, Monaghan JM, Morrow CP, Tattersall MHN (eds): "Gynecologic Oncology. Fundamental Principles and Clinical Practice," 2nd Edition. Edinburgh: Churchill Livingstone, 1992: 419–441.
16. Ridley CM, Buckley CH, Fox H: Pathology of the vulva and associated structures. In Fox H (ed): "Haines and Tailor Obstetrical and Gynaecological Pathology," 2nd edition. Edinburgh: Churchill Livingstone, 1995: 51–133.
17. McKee PH: "Pathology of the skin," 2nd edition. London: Mosby, 1996: 15.1–15.87.
18. Lever WF, Schaumburg-Lever G: "Histopathology of the Skin," 7th edition. Philadelphia: JB Lippincott, 1990: 578–650.
19. Shepherd JH: Revised FIGO staging for gynaecological cancer. Br J Obstet Gynaecol 1989:96:889–892.
20. Way S: "Malignant Disease of the Vulva." Edinburgh: Churchill Livingstone, 1982.
21. Jiminez HT, Fenoglio CM, Richart RM: Vulvar basal cell carcinoma with metastasis: A case report. Am J Obstet Gynecol 1975; 121:285–286.
22. Safai B, Good RA: Basal cell carcinoma with metastasis. Arch Pathol Lab Med 1977;101:327–331.